IN THE CLAIMS:

Kindly cancel claims 1-24 and add new claims 25-28 as follows:

-- 25. A method of fabricating a semiconductor device, comprising the steps of:

providing a substrate having a doped semiconductor region and a gate wiring, forming a lower conductor structure, and forming an insulating layer overlying said lower structure and having at least one through opening extending to said lower conductor structure; and

forming an upper conductor structure on the insulating layer and causing the upper conductor structure to be connected to the lower conductor structure via the through opening;

wherein each said step of forming a conductor structure is carried out by:

forming at least one layer of a metal, a metal silicide, a metal nitride, a metal carbide, or a conductive oxide film; and

performing a plating operation in order to form a metal plating layer on the at least one layer, so that the metal plating layer adheres to the at least one layer.

26. A method as defined in claim 25 wherein the at least one layer of the upper conductor structure contacts the metal plating layer of the lower conductor structure.

27. A method of fabricating a semiconductor device, comprising the steps of:

providing a substrate having a doped semiconductor region, a gate wiring, a lower conductor structure which includes a metal plating layer, and an insulating layer overlying said lower structure and contacting metal plating layer and having at least one through opening extending to said lower conductor structure; and

forming an upper conductor structure on the insulating layer and causing the upper conductor structure to be connected to the lower conductor structure via the through opening;

wherein said step of forming an upper conductor structure is carried out by:

forming at least one layer of a metal, a metal silicide, a metal nitride, a metal carbide, or a conductive oxide film;

performing a plating operation in order to form a metal plating layer on the at least one layer, so that the metal plating layer adheres to the at least one layer; and

after said step of performing a plating operation, performing a thermal treatment in order to diffuse material from the plating layer into the at least one layer.

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28. A method of fabricating a semiconductor device, comprising the steps of:

providing a substrate having a doped semiconductor region, a gate wiring, and an insulating layer overlying said semiconductor region and having at least one through opening; and

forming a conductor structure on the insulating layer and causing the conductor structure to extend into the through opening;

wherein said step of forming a conductor structure is carried out by:

forming at least one conductor layer of a metal, a metal silicide, a metal nitride, a metal carbide, or a conductive oxide film;

forming a patterned resist layer on the at least one conductor layer, the patterned resist layer having at least one opening which exposes a part of the at least one conductor layer;

performing a plating operation in order to form a metal plating layer on the at least one conductor layer in the opening in the patterned resist layer, so that the metal plating layer adheres to the at least one conductor layer;

removing the patterned resist layer; and

removing portions of the at least one conductor layer which are not covered by the metal plating layer, by an etching operation, using the metal plating layer as an etching mask.